

**ABSTRACT**

The present invention relates to an apparatus and method for processing the flow of semiconductor wafers through a furnace tool having a front-opening unified pod (FOUP) material handling system. The invention provides for an automated control flow to realize greater efficiency and assure process quality. In one aspect of the invention the wafer batch completing its operation is discharged simultaneous with the charging of the next batch. Essentially the operation takes place by overlapping processing operations. An embodiment of the invention includes a process comprising the steps of: providing a first batch of semiconductor material, and loading the first batch into a carrier which transports the first batch into a semiconductor manufacturing process, and while the first batch undergoes the process, forming a second batch of semiconductor material, and pausing a second batch process operation until the first batch completes processing, to reduce the idle time of said process.